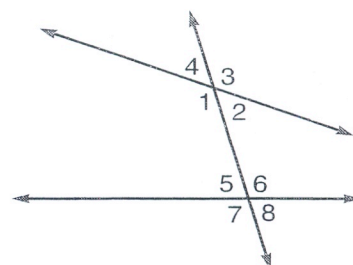


Study Guide *3.3 Blue Book***Parallel Lines and Transversals**

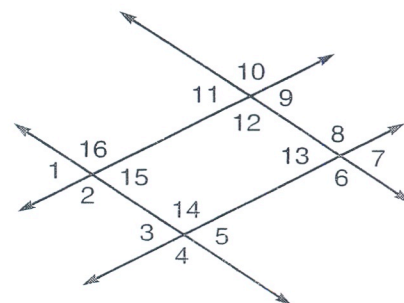
A line that intersects two or more lines in a plane at different points is called a **transversal**. Eight angles are formed by a transversal and two lines.



Types of Angles		
Angle	Definition	Examples
interior	lie between the two lines	$\angle 1, \angle 2, \angle 5, \angle 6$
alternate interior	on opposite sides of the transversal	$\angle 1$ and $\angle 6, \angle 2$ and $\angle 5$
consecutive interior	on the same side of the transversal	$\angle 1$ and $\angle 5, \angle 2$ and $\angle 6$
exterior	lie outside the two lines	$\angle 3, \angle 4, \angle 7, \angle 8$
alternate exterior	on opposite sides of the transversal	$\angle 3$ and $\angle 7, \angle 4$ and $\angle 8$

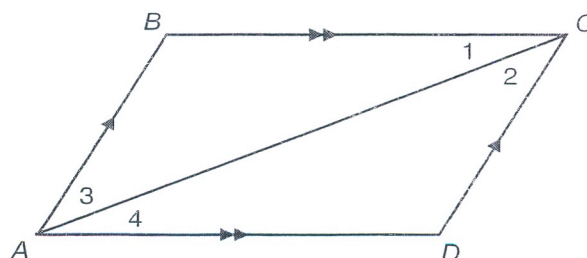
Identify each pair of angles as alternate interior, alternate exterior, consecutive interior, or vertical.

- $\angle 6$ and $\angle 10$
- $\angle 14$ and $\angle 13$
- $\angle 14$ and $\angle 6$
- $\angle 1$ and $\angle 5$
- $\angle 12$ and $\angle 15$
- $\angle 2$ and $\angle 16$



In the figure, $\overline{AB} \parallel \overline{DC}$ and $\overline{BC} \parallel \overline{AD}$.

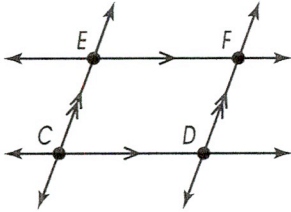
- For which pair of parallel lines are $\angle 1$ and $\angle 4$ alternate interior angles?
- For which pair of parallel lines are $\angle 2$ and $\angle 3$ alternate interior angles?



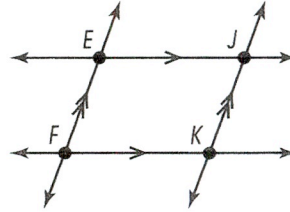
Practice • Parallel Lines with Transversals*Lessons 4.3 and 4.4*

Identify the parallel lines in each diagram.

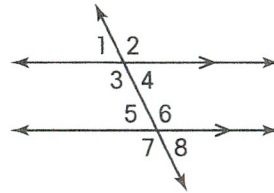
1.



2.



Use the diagram on the right.
Name all pairs of angles for each exercise.



3. alternate interior angles

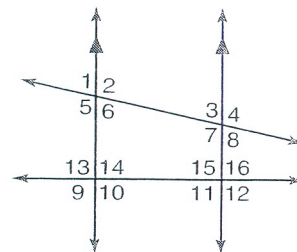
4. vertical angles

5. same-side interior angles

6. supplementary angles

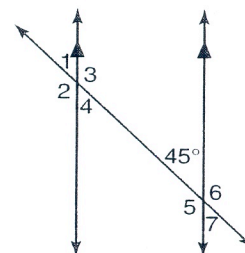
Identify each pair of angles as alternate interior, alternate exterior, consecutive interior, or vertical.

1. $\angle 1$ and $\angle 6$
2. $\angle 2$ and $\angle 3$
3. $\angle 2$ and $\angle 7$
4. $\angle 1$ and $\angle 8$
5. $\angle 2$ and $\angle 5$
6. $\angle 10$ and $\angle 11$
7. $\angle 13$ and $\angle 12$
8. $\angle 5$ and $\angle 4$
9. $\angle 3$ and $\angle 8$
10. $\angle 14$ and $\angle 15$
11. $\angle 9$ and $\angle 14$
12. $\angle 14$ and $\angle 11$



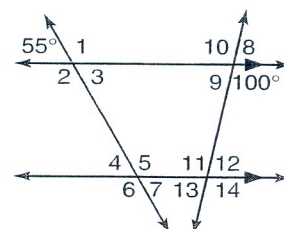
Find the measure of each angle. Give a reason for each answer.

13. $\angle 7$
14. $\angle 4$
15. $\angle 3$
16. $\angle 6$



Find the measure of each angle. Give a reason for each answer.

17. $\angle 1$
18. $\angle 3$
19. $\angle 12$
20. $\angle 11$





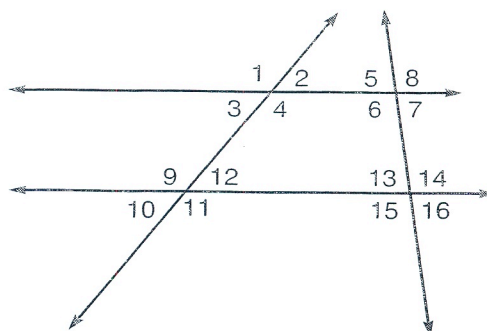
Practice

3.3 Blue Book

Parallel Lines and Transversals

Identify each pair of angles as alternate interior, alternate exterior, consecutive interior, or vertical.

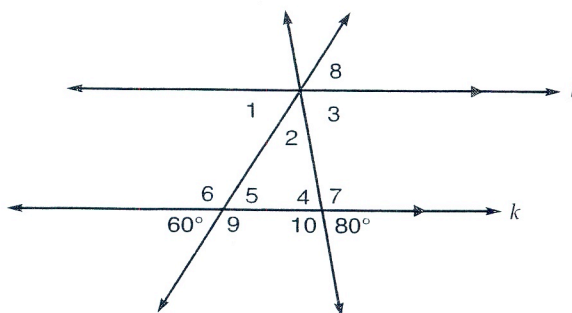
1. $\angle 9$ and $\angle 11$
2. $\angle 3$ and $\angle 9$
3. $\angle 3$ and $\angle 12$
4. $\angle 8$ and $\angle 6$
5. $\angle 8$ and $\angle 15$
6. $\angle 4$ and $\angle 5$
7. $\angle 1$ and $\angle 7$



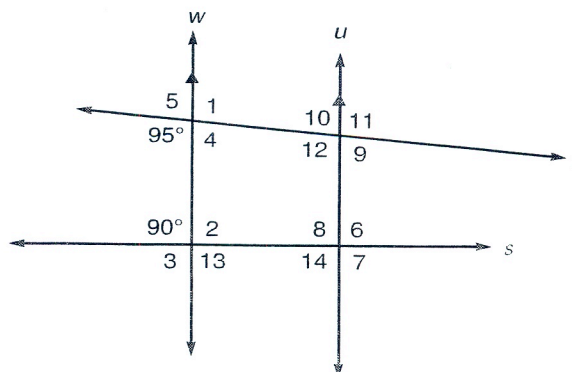
Exercises 1-7

Find the measure of each angle.
Give a reason for each answer.

8. $\angle 5$
9. $\angle 4$
10. $\angle 6$
11. $\angle 1$
12. $\angle 8$
13. $\angle 10$
14. $\angle 1$
15. $\angle 2$
16. $\angle 10$
17. $\angle 11$
18. $\angle 8$
19. $\angle 6$
20. $\angle 5$
21. $\angle 4$



Exercises 8-13



Exercises 14-21